

REMARKS

This application is amended in a manner believed to place it in condition for allowance at the time of the next Official Action.

Claims 1-27 are canceled without prejudice.

Claims 28-45 are new.

The new claims are directed to the elected invention, AVR4/5, now corresponding to SEQ ID NO: 11, with a certain amount of disulfide bridges in a tetramer.

The new claims also read on the elected species for the avidin amino acid mutation positions, i.e., at residues 86, 106, and 117, which are identified specifically for AVR4/5 as residues 84, 104 and 115, respectively.

Support for the recited AVR4/5 corresponding to SEQ ID NO: 11 may be found generally throughout the specification, for example, in Figure 9, which is described on page 6, lines 24-28. Also page 5, lines 17-22 and Figure 4, describe that the recited AVR4/5 represents AVR4/5 after the signal peptide, i.e., amino acids 1-24, has been cleaved. A skilled person in the art would recognize that after this signal peptide has targeted the protein at the desired location, it will be cleaved off to produce the mature protein. Throughout the specification, only mature proteins are discussed, as seen in the numbering of the amino acid sequences. Accordingly, the present claims are now directed

to mature protein AVR4/5 without signal peptides so as to be commensurate in scope with the present specification.

Support for the newly recited amino acid mutation positions may be found, for example, in Figure 4 and on page 11, lines 22-28. AVR4/5, as compared to avidin, includes a two amino acid deletion, i.e., amino acids 55 and 56. Accordingly, avidin amino acid mutation positions 86, 106, 117, and 124, for example, correspond respectively to AVR4/5 amino acid mutation positions as residues 84, 104, 115, and 122. Thus, the amino acid mutation positions recited are commensurate in scope with the present specification.

The Official Action objects to the specification for not complying with the requirements of 37 CFR 1.821-1.825. Specifically, the Official Action points out that the amino acid sequences of Figures 4 and 9 do not have proper sequence identifiers.

A new sequence listing is filed along with this amendment to identify the amino acid sequences in Figures 4 and 9, and the present specification is amended to reflect the new sequence identifiers.

Entry of the new sequence listing and corresponding amendments to the specification is respectfully requested.

Withdrawal of the objection is, thus, respectfully requested.

The Official Action objects to the claims for containing non-elected inventions.

As the presently-claimed invention is directed to the elected invention, i.e., AVR4/5, withdrawal of the objection is respectfully requested.

Claims 1, 6-10, 12, 14-16, 19, 22, 24, 25 and 27 are rejected under 35 USC §112, first paragraph, for not complying with the written description requirement.

The position of the Official Action is that the specification does not adequately describe the previously-recited genus of biotin-binding proteins. However, the Official Action points out that the specification does provide a sufficient description for AVR4/5.

As the present claims are directed to AVR4/5, withdrawal of the rejection is respectfully requested.

Claims 1, 6-10, 12, 14-16, 19, 22, 24, 25 and 27 are rejected under 35 USC 112, first paragraph, as not complying with the enablement requirement.

The position of the Official Action is that the specification is enabling for AVR4/5 having mutations at amino acid positions 86, 106 and 117, but the specification does not provide enablement for any mutant of biotin-binding protein.

New claims 28-45 are directed to AVR4/5, SEQ ID NO: 11, which includes mutations at amino acid positions 84, 104 and 115. As shown in Figure 4 and explained at page 11, lines 22-28,

AVR4/5 does not include an amino acid at positions 55 and 56. Accordingly, the mutations occur at amino acid positions 84, 104, and 115, which correspond to amino acid positions 86, 106, and 117, respectively, for avidin.

Therefore, claims 28-45 comply with the enablement requirement, and withdrawal of the rejection is respectfully requested.

The Official Action does not reject any of the claims based on prior art.

In view of the above, applicants believe that the present application is in condition for allowance at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

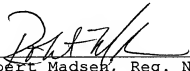
Should the Examiner believe that the present claims are not consistent with the originally-elected invention and species, or that the present amendment does not place the application in condition for allowance, the Examiner is encouraged to contact the undersigned at the telephone number below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional  
fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

  
\_\_\_\_\_  
Robert Madsen, Reg. No. 58,543  
745 South 23<sup>rd</sup> Street  
Arlington, VA 22202  
Telephone (703) 521-2297  
Telefax (703) 685-0573

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Appendix:

The Appendix includes the following item:

- sequence listing in paper and disk formats